INDEX

SOVIET MINING SCIENCE

Volume 11, Numbers 1-6

SOVIET MINING SCIENCE

Volume 11, Numbers 1-6

(A translation of Fiziko-tekhnicheskie Problemy Razrabotki Poleznykh Iskopaemykh)

A

Abramov, B. K. - 588
Abramov, N. A. - 99
Afans'ev, B. G. - 588
Afinogenov, Yu. A. - 730
Aksenov, V. K. - 477
Alabuzhev, P. M. - 328
Aleksandrov, B. A. - 742
Alekseenko, S. F. - 459
Alekseev, G. V. - 271
Alekseev, V. S. - 62
Alenichev, V. M. - 502
Al'tshuler, Ya. E. - 354
Amusin, B. Z. - 255
Antonov, P. E. - 344
Antsyferov, M. S. - 9
Antsyferova, N. G. - 9, 31, 112
Artemenko, A. F. - 533
Artemov, V. A. - 656

B

Baka, A. V. - 430
Balalaeva, S. A. - 194
Baranov, E. G. - 664
Baron, L. I. - 85
Baron, V. L. - 85
Baryshnikov, F. A. - 55
Belaventsev, L. P. - 738
Belyatskii, V. P. - 656
Bersenev, Yu. F. - 129
Bezmaternykh, V. A. - 669
Bimberekov, A. P. - 55
Blokh, N. P. - 464
Bobryakov, A. P. - 212
Bodnarashik, L. G. - 415
Bogdanova, I. P. - 415
Boloban, V. N. - 579
Borisenko, A. A. - 138
Borisov, V. G. - 44
Borovikov, V. A. - 493
Brenner, V. A. - 344, 512
Brezgulevskii, I. V. - 163
Brobov, G. F. - 95
Brodskaya, A. P. - 354
Bundaev, V. V. - 480
Burgin, B. Sh. - 129
Buteev, A. I. - 274
Butorov, I. S. - 542
Buyanov, A. D. - 449

C

Chistyakov, A. A. - 539
Chizhikov, A. V. - 31, 112

D

Danil,chuk, A. S. - 134
Davydov, E. G. - 710
Degtyarev, F. N. - 377
Deinichenko, V. A. - 508
Demchuk, P. A. - 483
Demin, A. M. - 679
Dergunov, D. M. - 571
Dimanshtein, A. S. - 251
Dimova, L. P. - 274
Dodis, Ya. M. - 74
Doroginitskaya, L. M. - 730
Drukovanyi, M. F. - 108
Dubynin, N. G. - 95
Dudushkina, K. I. - 156
Dyadechkin, N. I. - 39, 169
D'yakov, B. V. - 229
Dyrdin, V. V. - 323, 733
Dzidziguri, A. A. - 114
Dzyubenko, V. T. - 229

E

Efremovstsev, N. S. - 539
Epel'man, M. L. - 59
Erlikhman, F. M. - 480, 646
Ermolaev, Yu. A. - 129
Ertikova, G. A. - 401

F

Fabrichnyi, Yu. F. - 438
Faddeenkov, N. N. - 88, 153, 566, 659
Faddev, B. V. - 502
Fainer, I. A. - 742
Fedorin, V. A. - 548
Fedorov, A. V. - 381
Fes'kov, M. I. - 449
Filatov, S. S. - 745
Filatova, E. V. - 555
Filimonov, N. V. - 166
Filimonov, V. N. - 59
Filimonova, L. A. - 166
Firsov, V. P. - 542
Fotieva, N. N. - 307
Freidina, E. V. - 50
Freidman, S. L. - 702
Frolov, B. A. - 762

G

Galust'yan, É. L. - 685
Garmash, N. Z. - 248, 442
Gattsuk, V. L. - 555
Gavrik, V. A. - 39
Gavrilov, P. D. - 542
Genkin, E. E. - 27
Georgievskii, V. S. - 65
Georgievskii, V. V. - 710
Gerike, B. L. - 571
Glembotskii, A. V. - 401
Gnip, V. A. - 277
Golovanov, V. I. - 766
Gorbachev, A. T. - 271, 381
Gorenkov, N. L. - 166
Gotovskii, V. P. - 411
Grebov, S. P. - 389
Gribanova, L. P. - 39
Gritsenko, V. I. - 430
Gromova, N. V. - 216

I

Ionin, A. A. - 656
Im, V. A. - 160
Isachenko, V. M. - 234
Isaev, A. V. - 552
Ivanov, V. V. - 323, 733
Ivko, V. I. - 574
Izakson, V. Yu. - 627

K

Kachan, Yu. G. - 452, 584
Kaimashnikov, G. S. - 99, 264
Kalinin, G. P. - 545
Kamyshnikov, D. M. - 562
Karpenko, L. N. - 204
Kartuzov, M. I. - 99
Katanov, B. A. - 435, 526
Katkov, G. A. - 597
Katsnel,son, N. V. - 150
Kazakov, B. P. - 770
Khaimova-Mal'kova, R. I. - 260, 597

Kharitonov, S. E. - 169
Kholmyanskii, M. M. - 266
Khomyakov, V. I. - 242
Kill', I. D. - 134
Kipervasser, V. M. - 127
Kiselev, Ya. M. - 127
Klimenko, Yu. M. - 545
Knurenko, V. A. - 742
Kolendo, E. G. - 354
Kolesnikov, M. A. - 542
Kolokolov, S. B. - 438
Korobskoi, V. K. - 226
Korshunov, A. N. - 571, 742
Korzh, V. A. - 242
Kostyukova, O. N. - 166
Kotenko, V. F. - 499
Kovalenko, A. S. - 50
Kovalenko, V. A. - 664
Kovalev, V. I. - 522, 568
Kozhevin, V. G. - 185
Kozin, B. A. - 539
Kozlov, V. G. - 592, 751
Kozlovskii, S. S. - 418
Krasnikov, Yu. D. - 31, 112
Krasnoshtein, A. E. - 770
Krasovskii, A. N. - 472
Krivchenko, A. A.- 430
Krivoruchko, A. M. - 121
Krol,, G. V. - 733
Kucheryavyi, Yu. F. - 108
Kulakov, G. I. - 199
Kulakov, V. N. - 762
Kulishenko, I. I. - 522, 568
Kutenkov, L. V. - 185
Kuvaev, N. N. - 220
Kuznetsov, S. V. - 293
Kuznetsov, V. M. - 566
Kuznetsov, Yu. F. - 68

L

Laigna, K. Yu. - 748
Latyshenko, M. P. - 526
Lebedev, A. V. - 229
Lepikhov, A. G. - 691
Leshchukov, N. N. - 669
Levshin, A. A. - 614
Liberman, Yu. M. - 260
Lin'kov, A. M. - 607
Lipin, Ya. I. - 299
Litvinenko, V. I. - 418
Livenskii, V. S. - 68
Lodus, E. V. - 65
Logov, A. B. - 571
Luchko, V. A. - 169
Luzin, G. P. - 27
Lykhin, P. A. - 669
Lysenko, N. M. - 695
Lysenko, O. S. - 277
Lyuboshchinskii, D. M. - 160, 344, 512
Lyutyi, V. A. - 522

M

Makarov, S. V. - 238
Mal'tsev, V. M. - 669
Markov, G. A. - 173, 468
Marov, I. N. - 401
Martynov, Yu. I. - 472
Maryuta, A. N. - 406, 452, 584
Mashtakov, V. P. - 319
Mashukov, V. I. - 150
Matushenko, V. M. - 576
Mekk, V. A. - 438
Melezhik, V. P. - 459
Melkikh, V. I. - 754
Mel'nikov, E. A. - 251
Mel'nikov, O. I. - 12
Mikhailov, V. A. - 44
Miller, Yu. A. - 738
Mirsalimov, V. M. - 601
Mirzaev, I. M. - 70
Mitin, L. A. - 274
Mladetskii, I. K. - 406
Mochalov, A. M. - 365
Mokhnachev, M. P. - 216
Morozov, G. G. - 62
Moskalev, A. N. - 226
Muchnik, S. V. - 91, 599, 758
Mukhin, I. D. - 277
Muratov, V. A. - 185
Musokhranov, G. F. - 751
Myaken'kii, V. I. - 396
Myasnikov, N. F. - 411

N

Neiman, I. B. - 245, 562
Nekrasov, L. B.- 223
Nesterenko, V. S. - 163
Nezgovorov, A. I. - 150
Nikiforovskii, V. S. - 23
Nikolaev, G. I. - 539
Nikonova, I. P. - 673
Novitskii, P. A. - 406
Novozhilov, M. G. - 142
Novozhilov, S. V. - 770

O

Olovyannyi, A. G. - 255
Ordin, A. A. - 548
Orekhov, E. I. - 285
Osokin, V. V. - 35

P

Panchenko, A. A. - 377
Panchenko, D. F. - 220
Pavlov, A. I. - 745
Pazdnikov, N. V. - 99
Petrov, N. N. - 336
Petrukhin, G. M. - 401
Petrushev, R. A. - 526
Pimakov, A. G. - 435
Plakhotnyi, P. I. - 319
Plotnikov, V. P. - 698
Podkorytov, E. I. - 542
Podoinitsyn, E. M. - 425
Podoprigora, Yu. A. - 530
Pokrovskii, G. N. - 212, 673
Polevoi, V. F. - 169
Popov, S. P. - 721
Pozin, E. Z. - 508
Prikhod'ko, P. T. - 289
Proskuryakov, N. M. - 68
Proskuryakov, V. M. - 188
Protasov, Yu. I. - 505
Protosenya, A. G. - 178

R

Rabinovich, N. R. - 622
Repko, A. A. - 421
Reva, V. N. - 12
Revuzhenko, A. F. - 78
Revzyuk, E. B. - 255
Reznikov, I. D. - 542
Rikenglaz, L. É. - 223
Rivkin, I. D. - 533
Rubinshtein, B. Sh. - 349
Rudenko, O. A. - 50
Ruzinova, I. L. - 156
Ryzhkov, V. V. - 251

S

Sachkov, V. G. - 117
Sadovoi, N. P. - 319
Sakerina, L. G. - 445
Sakovich, V. V. - 533
Samarina, T. A. - 770
Santalova, T. I. - 9
Savchenko, S. N. - 173, 468
Savintseva, Yu. P. - 401
Savkov, L. V. - 371
Savova, N. V. - 442
Sboev, V. M. - 281
Semenko, M. I. - 533
Sepiashvili, A. D. - 114
Seroshtan, V. I. - 442
Serpeninov, B. N. - 212, 673
Seryakov, V. M. - 23
Shemyakin, E. I. - 632
Sher, E. N. - 81
Sherstyukov, A. D. - 142
Shevchenko, N. A. - 108
Shevkun, E. B. - 425
Shirokov, A. P. - 234
Shishkin, V. P. - 555
Shkonda, V. V. - 530
Shmidt, P. F. - 542
Shpon'ko, V. I. - 242
Shramko, V. M. - 766
Shtein, M. Sh. - 312
Shtele, V. I. - 774
Shtumpf, G. G. - 185

Shumskii, I. P. - 147
Shupletsov, Yu. P. - 299, 464
Shushkina, O. I. - 679
Sinel'nikov, L. M. - 99, 264
Sitkarev, G. T. - 358
Slavin, O. K. - 1
Slepokurov, A. I. - 234
Smirnov, A. A. - 539
Smirnov, V. V. - 212
Smolyanitskii, A. A. - 27
Sologub, S. Ya. - 522, 568
Soroka, A. V. - 539
Spivakov, B. Ya. - 401
Stavrogin, A. N. - 65
Stazhevskii, S. B. - 78
Stepanov, V. Ya. - 194
Stepanov, Yu. S. - 483
Stetsenko, Z. A. - 430
Strekachinskii, G. A. - 548
Studinskii, N. M. - 142
Sugarenko, G. G. - 559
Svalov, V. P. - 277

T

Tangaev, I. A. - 74
Tarapata, V. Ya. - 533
Tarasov, B. G. - 323, 733
Timanteev, O. A. - 456
Tkachenko, A. P. - 142
Tkachenko, L. P. - 559
Tkachenko, V. M. - 39
Tkachenko, V. Ya. - 229
Tomashev, G. S. - 650
Trost', V. M. - 134
Trumbachev, V. F. - 1, 679
Tsesarenko, N. P. - 579
Tuaev, O. S. - 134
Tupikov, B. T. - 559
Tuyakhov, L. S. - 508

U

Uchitel', A. D. - 354

V

Vasilenko, V. P. - 430
Vasil'ev, V. N. - 39
Veigel't, Yu. P. - 55
Velikii, M. I. - 104
Vershinin, A. A. - 745
Vlasenko, B. V. - 646
Vlokh, V. P. - 299
Voitsekhovskaya, F. F. - 274
Volkomirskii, Ya. I. - 542
Vorozhtsov, E. V. - 271, 381
Vysotskii, V. P. - 526

Y

Yagupov, A. V. - 104
Yakovitskya, G. E. - 281
Yalovenko, N. A. - 530
Yamanidze, T. Sh. - 114
Yanishevskii, A. A. - 552
Yavtushenko, O. V. - 226

Z

Zaporozhets, P. M. - 715
Zavadskaya, G. A. - 568
Zelenetskii, V. A. - 592, 751
Zhitkov, É. F. - 17
Zhukov, V. V. - 499
Zhurilo, A. A. - 303
Zil'bershmidt, V. G. - 456
Zil'bert, I. S. - 160, 512
Zinchenko, I. N. - 389
Zolotov, Yu. A. - 401
Zubkov, A. V. - 299
Zuev, V. S. - 542
Zvonarev, N. K. - 517
Zvorygin, L. V. - 229

TABLES OF CONTENTS

SOVIET MINING SCIENCE

Volume 11, Numbers 1-6

(A translation of Fiziko-tekhicheskie Problemy Razrabotki Poleznykh Iskopaemykh)

Volume 11, Number 1 January-February, 1975

	Engl.	Russ.
ROCK MECHANICS AND ROCK PRESSURE		
Rock Deformation Models Which Involve Rheological Properties — O. K. Slavin and V. F. Trumbachev	1	3
Possible Causes of Dynamic Phenomena in Coal Mines — M. S. Antsyferov, N. G. Antsyferova, and T. I. Santalova	9	12
Loads on the Linings of Pit Shafts Due to Cryogenic Swelling — O. I. Mel'nikov and V. N. Reva	12	15
Calculation of the Widths of Rooms and Pillars with Roof Control by Convergence on Yielding Pillars — É. F. Zhitkov	17	21
ROCK BREAKING		
Spalling Due to Dynamic Action on Bodies with Plane-Parallel Faces — V. S. Nikiforovskii and V. M. Seryakov	23	28
New Methods of Mining Iceland Spar — A. A. Smolyanitskii, E. E. Genkin, and G. P. Luzin	27	32
Mechanical-Impedance Method in Research on the Interaction between a Powerful Activated Plough and Solid Coal — Yu. D. Krasnikov, N. G. Antsyferova, and A. V. Chizhikov	31	36
Mechanism of Coal Fracture Due to Rapid Relief of External Pressure — V. V. Osokin	35	41
Influence of Certain Parameters on the Seismic Action and Quality Index of Blasting — L. P. Gribanova, N. I. Dyadechkin, V. A. Gavrik, V. M. Tkachenko, and V. N. Vasil'ev	39	46
OPEN-CUT MINING		
Wind Loading of Films of Bituminous Emulsion — V. A. Mikhailov and V. G. Borisov	44	51
Effect of Mine-Transport-Equipment Reliability on the Productivity of a Quarry System — E. V. Freidina, A. S. Kovalenko, and O. A. Rudenko	50	58
PHYSICAL AND CHEMICAL PRINCIPLES OF BENEFICIATION		
Products of Interaction of Polyacrylamide Flocculants of Various Degrees of Hydrolysis with Cations of Simple Electrolytes, Studied by Means of Infrared Spectroscopy — F. A. Baryshnikov, A. P. Bimberekov, and Yu. P. Veigel't	55	64
Influence of Metal Content of an Ore on Extraction into the Finished Concentrates — M. L. Épel'man and V. N. Filimonov	59	69
Rate of Flotation of Kyanite, Quartz, and Muscovite — V. S. Alekseev and G. G. Morozov	62	71
BRIEF COMMUNICATIONS		
Effect of Atmospheric Moisture on Creep in Salt — A. N. Stavrogin, V. S. Georgievskii, and E. V. Lodus	65	75
Study of the Velocity of Propagation of Elastic Waves in Relation to Stress in Salt Rocks under Uniaxial Compression — N. M. Proskuryakov, V. S. Livenskii, and Yu. F. Kuznetsov	68	78
Interaction between the Bit and the Rock — I. M. Mirzaev	70	79
Power Consumption of Roller-Bit Drilling as an Index of the Mining-Related Properties of the Solid Rock — I. A. Tangaev and Ya. M. Dodis	74	83
Kinematics of the Motion of Loose Materials Relative to Rigid Surfaces — S. B. Stazhevskii and A. F. Revuzhenko	78	86

	Engl./Russ.	
Estimating the Crushing Action of a Long Charge in a Brittle Medium — E. N. Sher	81	88
Choosing Reliable Values for the Specific Explosives Consumption in Planning Ejection or Throwing-Down Blasting — L. I. Baron and V. L. Baron	85	91
Practical Application of the Rozin—Rammler Law in Breaking Down by Blasting —N.N Faddeenkov	88	94
Emission of Methane from Coal — S. V. Muchnik	91	97
BOOK REVIEW		
L. I. Baron and L. G. Kerekelitsy. Breaking Strengths of Rocks — Reviewed by N. G. Dubynin and G. F. Brobov	95	101
ANNIVERSARY		
Academician A. A. Dzidziguri: Sixtieth Birthday and Thirty-Five Years of Science Teaching	96	102

Volume 11, Number 2 March-April, 1975

ROCK BREAKING		
Stability of Underground Mine Workings with Various Types of Supports When Subjected to Blasting — M. I. Kartuzov, N. A. Abramov, N. V. Pazdnikov, L. M. Sinel'nikov, and G. S. Kaimashnikov	99	3
Acoustic Effects in the Thermal Fracture of Rocks — A. V. Yagupov and M. I. Velikii	104	9
Energy Contents of the Spectra of the Destructive Frequencies of Seismic Waves as the Epicentral Distance Varies in Solid Granite — M. F. Drukovanyi, Yu. F. Kucheryavyi and N. A. Shevchenko	108	14
The Optimum Force-Pulse Duration in Rock Breaking — Yu. D. Krasnikov, N. G. Antsyferova, and A. V. Chizhikov	112	18
MECHANIZATION AND AUTOMATION IN MINING		
Optimum Design of Vibration Suppressors for the Frame of a Rotary-Percussive Drill Rig — A. A. Dzidziguri, A. D. Sepiashvili, and T. Sh. Yamanidze	114	21
Influence of Bit Geometry and Cutting-Edge Wear on the Design of a Drilling Machine with a Differential Link to the Effector Mechanisms — V. G. Sachkov	117	24
Determination of the Quantity of Heat Evolved during Operation of Scraper Conveyers in Longwalls of Deep Pits — A. M. Krivoruchko	121	29
Feasibility of Using Electric Locomotives with Both Conductor Wires and Storage Batteries in the Gornaya Shoriya Iron Ore Mines — Ya. M. Kiselev and V. M. Kipervasser	127	36
Dynamic Relation between the Scooping Force and the Lateral Feed of a Dredger — Yu. F. Bersenev, B. Sh. Burgin, and Yu. A. Ermolaev	129	38
MINE AERODYNAMICS		
Transient Aerodynamic Processes in Ventilating Shafts with a Drip — O. S. Tuaev, A. S. Danil'chuk, I. D. Kill', and V. M. Trost'	134	44
Use of the Ehda Method to Investigate Degassing of Development Workings by Safety Boreholes — A. A. Borisenko	138	47
Kinetics of Formation of an Inflammable Dust—Gas Cloud during Blasting of Sulfur Ores — M. G. Novozhilov, A. P. Tkachenko, A. D. Sherstyukov, and N. M. Studinskii	142	51
BRIEF COMMUNICATIONS		
Ultrasonic Method of Estimating the Structure and Fissuring of Coals — I. P. Shumskii	147	57
Effect of the Detonation Products of Explosives on the Chemical Composition of Blasted Rocks — V. I. Mashukov, A. I. Nezgovorov, and N. V. Katsnel'son	150	59
Analytical Representation of the Grain-Size Composition of Blasted Rock, Allowing for Its Initial Fissuring — N. N. Faddeenkov	153	61
Assessing the Unformity of Multidimensional Geological Aggregates as a Method for Classifing Rocks in the Prokop'evsk Region of the Kuzbass — K. I. Dudushkina and I. L. Ruzinova	156	63

	Engl.	Russ.
Predicting the Cutting Resistance of Potash Ores — I. S. Zil'bert, V. A. Im, and D. M. Lyuboshchinskii	160	67
Relation between the Crushability and the Mineralographic and Petrographic Composition in Ores from the Copper Pyrites Deposits of the Urals — I. V. Brezgulevskii and V. S. Nesterenko	163	69
Use of Recirculated Effluent in the Treatment of Gold Ores — L. A. Filimonova, N. V. Filimonov, O. N. Kostyukova, and N. L. Gorenkov	166	71
Choice of γ-Ray Source for Determining the Mechanical Properties of Granular Materials — N. I. Dyadechkin, V. A. Luchko, S. E. Kharitonov, and V. F. Polevoi	169	73
In Memory of Mikhail Mikhailovich Protod'yakonov (1874-1930)	171	76

Volume 11, Number 3 May-June, 1975

	Engl.	Russ.
MECHANICS AND ROCK PRESSURE		
Some Features of the Stress Distribution around Development Working Lying near the Extraction Area — G. A. Markov and S. N. Savchenko	173	3
Application of the Creeping-Plastic Model to Research on the Stress—Strain State of the Rock around a Working — A. G. Protosenya	178	8
Use of the Ultrasonic Method to Investigate the State of the Rock Mass around Underground Workings — V. G. Kozhevin, V. A. Muratov, G. G. Shtumpf, and L. V. Kutenkov	185	16
Seismic Investigations of the State of Stress of Rock — V. M. Proskuryakov	188	19
Investigation of the State of Stress of Solid Rock with Inhomogeneous Structure by Means of the Method of Finite Elements — V. Ya. Stepanov and S. A. Balalaeva	194	26
Determining Stresses by the Means of Readings of a Hydraulic Sensor — G. I. Kulakov	199	31
The Problem of a Shallow Working in a Vertical Coal Seam — L. N. Karpenko	204	37
ROCK BREAKING		
Development of Methods of Experimental Investigation of the Dynamic Strength and Fracture Criteria of Rocks — A. P. Bobryakov, G. N. Pokrovskii, B. N. Serpeninov, and V. V. Smirnov	212	45
Tension Fatigue of Rocks — M. P. Mokhnachev and N. V. Gromova	216	49
Effect of Moisture on the Dynamic Strength of Brown Coals — N. N. Kuvaev and D. F. Panchenko	220	54
The Energy Required to Break Frozen Rocks by Means of a Very Simple Combined Electrothermomechanical Instrument — L. B. Nekrasov and L. É. Rikenglaz	223	57
The Reflection of UHF Electromagnetic Energy from Rocks — A. N. Moskalev, O. V. Yavtushenko, and V. K. Korobskoi	226	60
UNDERGROUND MINING		
Results of Pit Investigations of Mechanized Coal Winning by the Shield System — V. T. Dzyubenko, L. V. Zvorygin, A. V. Lebedev, B. V. D'yakov, and V. Ya. Tkachenko	229	64
Efficiency of Roof Bolts in Pits of the "Primorskugol'" Group — A. P. Shirokov, A. I. Slepokurov, and V. M. Isachenko	234	69
Rock Pressure Control in Working a Wide Pillar by Breast Stoping with Stowing — S. V. Makarov	238	74
Action of the Ore Mass on the Base of a Chute Drawer during Elimination of Hanging — V. I. Khomyakov, V. A. Korzh, and V. I. Shpon'ko	242	78
Experience in the Use of the Rapid Acoustic Method to Determine the Fissuring of Ledge Rock — I. B. Neiman	245	82
Possibility of Using the Earth's Natural Magnetic Field to Investigate Solid Rock — N. Z. Garmash	248	85
Use of Composite Models to Study the Stress—Strain State of the Solid Rock — V. V. Ryzhkov, E. A. Mel'nikov, and A. S. Dimanshtein	251	88

	Engl.	Russ.
BRIEF COMMUNICATIONS		
Use of the Method of Finite Elements to Investigate the State of Stress of a Lining with an Irregular Cross Section — B. Z. Amusin, A. G. Olovyannyi, and E. B. Revzyuk	255	93
The Stressed State of Roof Rock during Stoping with Stowing of the Worked-Out Area — Yu. M. Liberman and R. I. Khaimova-Mal'kova	260	97
Increase in the Resistance of Mine Workings to Seismic Loads by Bolting the Roof Rock — L. M. Sinel'nikov and G. S. Kaimashnikov	264	102
An Approximate Relation between the Spatial, Planar, and Linear Particle Distributions in Materials or Jointed Rocks — M. M. Kholmyanskii	266	103
Three-Dimensional Problems in Degassing of Coal Seams — A. T. Gorbachev, G. V. Alekseev, and E. V. Vorozhtsov	271	108
An Entry Drifting Machine with a Hydraulic Hammer for Cutting Hard Rocks — L. A. Mitin, F. F. Voitsekhovskaya, L. P. Dimova, and A. I. Buteev	274	111
Stress Distributions Due to Blasting in a Potash Mine — I. D. Mukhin, V. A. Gnip, V. P. Svalov, and O. S. Lysenko	277	113
The Radiation Impedance of an Elementary Dipole Lying in a Cavity Surrounded by a Conducting Medium — V. M. Sboev and G. E. Yakovitskaya	281	118
Use of Elastic Wave Propagation Velocities to Study the Three-Dimensional Geometry of Jointing — E. I. Orekhov	285	122
CHRONICLES		
Centenary (1874-1974) of the Birth of Academician A. A. Skochinskii, the Architect of Mining Science in Soviet Siberia — P. T. Prikhod'ko	289	127
Fifth All-Union Conference on Rock Mechanics — S. V. Kuznetsov	293	130
In Memory of Georgii Viktorovich Rodionov	296	133

Volume 11, Number 4 July-August, 1975

	Engl.	Russ.
ROCK MECHANICS AND ROCK PRESSURE		
The Effect of Moisture on the Results of Determinations of Stresses in Solid Rock — N. P. Vlokh, A. V. Zubkov, Ya. I. Lipin, and Yu. P. Shupletsov	299	3
Analytical Determination of the Displacement of the Surrounding Rock during Coal Cutting — A. A. Zhurilo	303	6
The State of Stress around a Noncircular Working under the Action of Tectonic Forces — N. N. Fotieva	307	10
The Stress–Strain State of a Half-Space Near the End of a Circular-Cylindrical Excavation — M. Sh. Shtein	312	15
How Rheological Properties Affect Displacement of the Rock Mass Around the Periphery of a Working — P. I. Plakhotnyi, V. P. Mashtakov, and N. P. Sadovoi	319	22
A Mathematical Model of the Electrical Resistivity of a Deformed Rock — B. G. Tarasov, V. V. Ivanov, and V. V. Dyrdin	323	25
MECHANIZATION AND AUTOMATION OF MINING OPERATIONS		
The Relation between Force Pulse Shape and Some Characteristics of the Motion of a Rigid Body — P. M. Alabuzhev	328	30
Methods of Assessing the Efficiencies of Mine Ventilation Plants — N. N. Petrov	336	38
Probabilistic Methods in Selecting Parameters for Mechanized Supports — V. A. Brenner, D. M. Lyuboshchinskii, and P. E. Antonov	344	47
Some Aspects of the Reliability of Mining Equipment — B. Sh. Rubinshtein	349	52
Determining the Resistance of Loose Loads to Vibrational Discharge with a Discrete-Layer Mechanical Model — A. D. Uchitel', Ya. E. Al'tshuler, É. G. Kolendo, and A. P. Brodskaya	354	56
The Theoretical, Technical, and Operational Productivities of Excavators — G. T. Sitkarev	358	61

	Engl./Russ.	
OPEN-CUT MINING		
Calculating the Parameters of Stratified Rock Slopes — A. M. Mochalov	365	68
The Stability of Slopes with Complex Profiles — L. V. Savkov	371	73
Some Aspects of Optimum Planning of the Operation of a Railroad Transport System in an Open Pit — F. N. Degtyarev and A. A. Panchenko	377	79
MINE AERODYNAMICS		
Calculation of the Motions of Gas in a Coal Seam with a Quasilinear Law of Filtration — E. V. Vorozhtsov, A. T. Gorbachev, and A. V. Fedorov	381	83
Transient Gasdynamic Processes due to Changes in the Ventilation and Degassing Conditions in a District — S. P. Grekov and I. N. Zinchenko	389	91
A Mathematical Model of the Residual Gas Pressure Distribution in a Seam and the Rock Affected by the Extraction of a Series of Seams — V. I. Myaken'kii	396	98
PHYSICAL AND CHEMICAL PRINCIPLES OF BENEFICIATION		
The Reaction of Chelate-Forming Reagents with Minerals under Flotation Conditions — A. V. Glembotskii, G. A. Evtikova, G. M. Petrukhin, I. N. Marov, Yu. A. Zolotov, B. Ya. Spivakov, and Yu. P. Savintseva	401	104
Possible Ways of Drawing a Magnetic Product into the Concentric Zone of a Semicounterflow or Counterflow Separator — A. N. Maryuta, I. K. Mladetskii, and P. A. Novitskii	406	109
Flow Conditions of Pulp in the Working Zone of Ball Separators and Their Effect on the Separation Efficiency — N. F. Myasnikov and V. P. Gotovskii	411	114
Effect of Pulp Structurization on the Results of Magnetic Separation in a Force Field — I. P. Bogdanova and L. G. Bodnarashik	415	117
BRIEF COMMUNICATIONS		
A Method for Investigating the Stress Concentration at the Periphery of a Mine Working under a Longitudinally Directed Load — S. S. Kozlovskii and V. I. Litvinenko	418	121
Extrusion of a Layer from the Wall of a Vertical Mine Working — A. A. Repko	421	123
Determining the Structure-Strength Properties of Massive Rock — E. M. Podoinitsyn and E. B. Shevkun	425	127
The Contents of Hard Inclusions and the Abrasiveness of Coal Seams in the Donbass — A. A. Krivchenko, Z. A. Stetsenko, V. P. Vasilenko, V. I. Gritsenko, and A. V. Baka	430	130
The Shape of a Continuous Cutting Edge of a Drill Bit — B. A. Katanov and A. G. Pimakov	435	134
Calculating the Resistance of Blasted Rock to Scooping by a Bucket — Yu. F. Fabrichnyi, S. B. Kolokolov, and V. A. Mekk	438	137
Comparison of the Efficiencies of Bucket-Wheel Excavators — N. Z. Garmash, V. I. Seroshtan, and N. V. Savova	442	140
Fracture by a Jet — L. G. Sakerina	445	142
Foam Generators with Air Ejection by the Foam-Forming Solution — M. I. Fes'kov and A. D. Buyanov	449	146
The Principles of Automatic Monitoring of the Content of Coarse Classes in a Flow of Material — Yu. G. Kachan and A. N. Maryuta	452	148
Preparation of Optically Sensitive Materials with Given Elastic Properties for Solving Problems of Rock Pressure — V. G. Zil'bershmidt and O. A. Timanteev	456	151

Volume 11, Number 5 September-October, 1975

ROCK MECHANICS AND ROCK PRESSURE		
Electrical Simulation of a Complex State of Stress in Rock — S. F. Alekseenko and V. P. Melezhik	459	3
Stress Distribution in Rock during the Extraction of an Inclined Ore Body — N. P. Blokh and Yu. P. Shupletsov	464	9

	Engl.	Russ.
Stress Distribution near a Shallow Rectangular Extraction Working — G. A. Markov and S. N. Savchenko	468	14
Calculation of Deformations in the Foundation of a Surface Structure and in a Rock Block — Yu. I. Martynov and A. N. Krasovskii	472	18
Estimation of the Stresses in Borehole Fracturing — V. K. Aksenov	477	23
Calculation of the Stressed State of an Elastic Half-Plane with a Projection at the Base of Which a Point Force Is Applied — V. V. Bundaev and F. M. Érlikhman	480	26
ROCK BREAKING		
The Optimum Depth for Long Cylindrical Explosive Charges — Yu. S. Stepanov and P. A. Demchuk	483	30
The Influence of an Annular Air Space between a Charge and the Borehole Wall on the Stress Wave — V. A. Borovikov	493	41
An Investigation of the Seismic Characteristics of an Underground Explosion by the Finite-Difference Method — V. V. Zhukov and V. F. Kotenko	499	47
Laws Governing the Separation of Exploded Rock Fragments — B. V. Faddeev and V. M. Alenichev	502	50
A Rational Technology for Thermal Rock Breaking — Yu. I. Protasov	505	53
The Relation between the Structure and the Statistical Characteristics of the Process of Coal Cutting with by a single Pick — E. Z. Pozin, V. A. Deinichenko, and L. S. Tuyakhov	508	56
The Frequency Spectrum of the Cutting Resistance Index of Potash Ores — V. A. Brenner, I. S. Zil'bert, and D. M. Lyuboshchinskii	512	61
Plastic Deformation of Compressible Ground — N. K. Zvonarev	517	66
MECHANIZATION AND AUTOMATION OF MINING OPERATIONS		
Analytical Investigation of the Operation of Drilling Machines with Automatic Feed by a Bracket Screw — V. I. Kovalev, V. A. Lyutyi, I. I. Kulishenko, and S. Ya. Sologub	522	72
Effect of the Slope of the Side Surfaces of a Cutting Tool in a Drill Bit on the Cutting and Forward-Feed Forces — M. P. Latyshenko, B. A. Katanov, R. A. Petrushev, and V. P. Vysotskii	526	76
Experimental Investigation of the Lateral Displacements of the Empty Branch of a Belt Conveyer — Yu. A. Podoprigora, V. V. Shkonda, and N. A. Yalovenko	530	80
UNDERGROUND MINING		
The Influence of the Stress—Strain State of Rock on the Energy Consumption in Underground Borehole Ore Breaking — I. D. Rivkin, M. I. Semenko, V. V. Sakovich, A. F. Artemenko, and V. Ya. Tarapata	533	83
Introduction of Ore-Breakage in Layers Using Checker Board Patterns of Boreholes in an Experimental District of the "Yuzhnaya" Mine — A. V. Soroka, A. A. Smirnov, A. A. Chistyakov, N. S. Efremovtsev, G. I. Nikolaev, and B. A. Kozin	539	89
Movement of an Extraction System along the Hypsometry of a Steeply Dipping Seam — P. D. Gavrilov, M. A. Kolesnikov, E. I. Podkorytov, V. P. Firsov, V. S. Zuev, P. F. Shmidt, I. S. Butorov, Ya. I. Volkomirskii, and I. D. Reznikov	542	92
Deformation Pattern of the Roof Rocks in the Presence of Powered Supports in Central Asian Mines — G. P. Kalinin and Yu. M. Klimenko	545	96
Computer Determination of the Exteme Values of the Length of an Inclined Mine Shaft — G. A. Strekachinskii, A. A. Ordin, and V. A. Fedorin	548	99
Dynamics of Load Variation on a Safety Pillar — A. A. Yanishevskii and A. V. Isaev	552	103
BRIEF COMMUNICATIONS		
Floor Heave in Development Workings — V. P. Shishkin, V. L. Gattsuk, and E. V. Filatova	555	106
The Effect of Increased Support Resistance on the Displacements of the Periphery of an Extraction Drift in the Mel'nikov Pit of the Pervomaiskugol' Group — L. P. Tkachenko, G. G. Sugarenko, and B. T. Tupikov	559	109
The Potential Field in an Infinite Medium during Explosion of a Cylindrical Charge — D. M. Kamyshnikov and I. B. Neiman	562	111

	Engl.	Russ.
The Quality of Rock Crushing in Explosive Ore Breaking — V. M. Kuznetsov and N. N. Faddeenkov	566	114
Transport of Fracture Products during Rotary Drilling of Boreholes — I. I. Kulishenko, G. A. Zavadskaya, V. I. Kovalev, and S. Ya. Sologub	568	115
Coal Cutting with a Disk — A. N. Korshunov, D. M. Dergunov, A. B. Logov, and B. L. Gerike	571	118
The Influence of Seam Relief on the Orientation of the Sections of Mechanized Supports — V. I. Ivko	574	121
A Method of Comparing Excavation Equipment — V. M. Matushenko	576	122
Control of the Coal—Rock Boundary by Elastic Vibrations — V. N. Boloban and N. P. Tsesarenko	579	124
Vibration Insulation of the Pickup Units of Instruments for Monitoring the Fragment Size of Loose Material — Yu. G. Kachan and A. N. Maryuta	584	128
Determining the Long-Term Shear Strength of Contacts between Rocks — B. G. Afanas'ev and B. K. Abramov	588	131
Transient Motion of Gas in Mine Workings after Large Explosions — V. A. Zelenetskii and V. G. Kozlov	592	134
Determination of the Principal Stresses at the Point of a Rock Mass under Investigation — G. A. Katkov and R. I. Khaimova-Mal'kova	597	138
The role of Chemisorption of Methane on Fossil Coals — S. V. Muchnik	599	140
A Certain Elasticoplastic Problem for Rock Weakened by Two Equal Circular Workings — V. M. Mirsalimov	601	142

Volume 11, Number 6 November-December, 1975

ROCK MECHANICS AND ROCK PRESSURE		
Effective Methods of Solving Problems Concerning Abutment Pressure — A. M. Lin'kov	607	3
The Stress—Strain State of a Rock Mass during Working of an Inclined Coal Seam — A. A. Levshin	614	10
The State of Stress Around an Arbitrarily Oriented Mine Working Driven in an Anisotropic Rock Mass — N. R. Rabinovich	622	19
A Variant of the Method of Finite Elements for a Medium with Surface Weakening — V. Yu. Izakson	627	24
Two Problems in Rock Mechanics Arising Out of the Working of Deep Ore or Coal Deposits — E. I. Shemyakin	632	29
Calculation of the State of Stress of a Rock Mass from Surface Displacements — B. V. Vlasenko and F. M. Érlikhman	647	46
ROCK BREAKING		
A Mathematical-Probabilistic Model of Blasting Damage in a Fissured Block-Structured Medium — G. S. Tomashev	651	50
Experimental Determination of the Bulk Velocity in the Near Zone for Long Charges Detonated in Rocks — A. A. Ionin, V. P. Belyatskii, and V. A. Artemov	657	56
Distribution of Fragment Sizes in Block-Type Solid Rock Crushed by Blasting — N. N. Faddeenkov	660	59
Effect of the Detonation Parameters of Explosives on the Explosion Energy Distribution of a Borehole Charge — E. G. Baranov and V. A. Kovalenko	665	64
Determining the Parameters of a Set of Blast-Hole Charges — V. A. Bezmaternykh, P. A. Lykhin, N. N. Leshchukov, and V. M. Mal'tsev	670	69
The Effect of Striker Shape and Contact Stiffness on the Transmission of a Single Impact in a Striker—Drill Rod—Medium System — I. P. Nikonova, G. N. Pokrovskii, and B. N. Serpeninov	674	73

	Engl./Russ.
OPEN-CUT MINING	
Influence of Stress Distribution in the Slope Zone on the Stability of Open Workings and Dumps – A. M. Demin, V. F. Trumbachev, and O. I. Shushkina	680 79
Control of the Stability of the Working Sides of Open Pits – É. L. Galust'yan	686 85
MINE AERODYNAMICS	
A Method of Calculating the Natural Ventilating Pressure Created by a Main Fan – A. G. Lepikhov	691 90
A Mathematical Representation of the Dynamic Characteristics of the Ventilator–Network System in the Il'inskaya-1 Pit – N. M. Lysenko	696 95
Comparative Analysis of Cutter and Drill Splitting Mechanisms of Mining Machines – V. P. Plotnikov	699 98
Air Leaks through the Worked-Out Area of a Mining-Out Sector – S. L. Freidman	703 102
A Method of Constructing Independent Routes and Sections of Network Models – V. V. Georgievskii and E. G. Davydov	711 110
Theory of Gas Flow in Capillaries and Porous Media – P. M. Zaporozhets	716 114
NEW METHODS AND DEVICES	
Determination of the Complete Stress Tensor by the Load-Relief Method in a Transversally Isotropic Rock Mass – S. N. Popov	722 121
A Method of Combined Measurement of the Coefficients of Compressibility of Reservoir Rocks and the Propagation Velocity of Longitudinal Waves – Yu. A. Afinogenov and L. M. Doroginitskaya	731 130
The Nature and Distribution of Self-Potential in Worked Coal Seams – B. G. Tarasov, G. V. Krol', V. V. Dyrdin, and V. V. Ivanov	734 132
An Electrometric Method of Finding Spontaneous Heating Sites in Coal – Yu. A. Miller and L. P. Belaventsev	739 137
BRIEF COMMUNICATIONS	
The Influence of Vibration Parameters on the Process of Advancing a Shield-Type Support – A. N. Korshunov, B. A. Aleksandrov, V. A. Knurenko, and I. A. Fainer	743 142
An Investigation of the Feasibility of Improving the Aerodynamic Characteristics of Jet Ventilators by Means of Annular Nozzles – A. I. Pavlov, S. S. Filatov, and A. A. Vershinin	746 145
Conditions for Formation of a Structured Air Flow in a Block of Rooms – K. Yu. Laigna	749 147
The Aerodynamic Resistance of Porous Bodies – V. A. Zelenetskii, V. G. Kozlov, and G. F. Musokhranov	752 150
An Improved Theory of Sampling – V. I. Melkikh	755 152
The Feasibility of Combined Determination of the Natural and Residual Methane Contents of a Coal Seam, the Methane Pressure in the Seam, the Sorption Isotherms, and the Gas Emission Kinetics – S. V. Muchnik	759 156
Improving the Reliability of Engineering Systems by Introducing an Effective Reserve – V. N. Kulakov and B. A. Frolov	763 161
The Probabilities of States of a Bunker in Transient Conditions – V. M. Shramko and V. I. Golovanov	767 164
A Nonisothermal Jet in a Downcast Airshaft – A. E. Krasnoshtein, B. P. Kazakov, S. V. Novozhilov, and T. A. Samarina	771 168
CURRENT EVENTS	
Second Seminar on Optimization of Mining Operations – Reviewed by V. I. Shtele	775 173
INDEX	
Author Index, Volume 11, Numbers 1-6, 1975	781
Tables of Contents, Volume 11, Numbers 1-6, 1975	785